pollen grains of the South American *Podocarpus* in the snow of South Orkney by Dr. Fritsch.

There are only two phanerogams known from the Antarctic, *Descampsia* and *Colobanthus*, which are the most southerly flowering plants known. There are no ferns, and mosses form the major terrestrial plant population, 52 species being known, of which 24 are endemic. The lichens are conspicuous, but few in species. The algæ, especially the unicellular kinds are abundant.

All the known facts, according to Dr. Brown, point to a Fuegian origin for the flora. A greater former extension of glaciation, which is well proved, is regarded as inimical to the descent of any part of the present flora from that of Tertiary times.

Beside the chapters on the botany of the South Orkneys, Gough Island and Ascension Island by Dr. Brown, Cardot contributes a general review of the mosses; Gepp, Holmes, Foslie and Fritsch treat of the fresh-water and marine algæ; and Harvey Pirie contributes notes on Antarctic bacteriology. The volume concludes with a useful bibliography of Antarctic botanical publications.

WM. H. DALL

A Text-book of Physics. Edited by A. WILMER DUFF. Third Edition. P. Blakiston's Son & Co. 1912.

The third edition of Duff's "Physics" is a great improvement typographically over the previous editions, and is consequently so changed that if it were not for the uniform binding of the three editions it would appear at first glance to be an entirely new book. Practically all the cuts have been made over from new drawings, with a noticeable increase in clearness and uniformity of size, or have been replaced by other and better ones. This, with the choice of better type, makes the reading much easier. As in the previous editions, the main subdivisions are by different men, but the order has been changed, "Wave Motion" coming after "Mechanics," and "Sound and Light" after "Electricity"; and there seems to be more unity of treatment in the whole and a natural connection between the parts which saves them from appearing as disjointed treatises. The text of the "Mechanics," by A. W. Duff, is practically unchanged from the previous edition, and the same may be said of "Wave Motion," by E. P. Lewis, and "Sound," by Wm. Hallock. "Conduction of Electricity through Gases and Radioactivity," by R. K. McClung, has a few changes and additions noticing some recent developments, but is otherwise unchanged. "Light," by E. P. Lewis, has been reduced in amount and improved by being partly rewritten and rearranged (though it previously possessed considerable merit). The portions on Heat and Electricity and Magnetism are entirely new. The part on Heat is by C. E. Mendenhall, of the University of Wisconsin, replacing that by K. E. Guthe in the other editions. The arrangement of the subject matter seems to be more logical and more briefly stated, and there is an improvement in the choice of illustrations, but in places there is less clearness of statement and treatment than in the previous edition. Nowhere is the improvement in the drawings more noticeable than in the case of "Electricity and Magnetism," by A. P. Carman, of the University of Illinois, which replaces that by A. W. Goodspeed in the previous editions and comprises also the former section by Professor Carman on Electromagnetic Induction, thus securing a desirable unity of treatment in this subject. Taken as a whole the parts of the book are remarkably well welded together, and, having as authors specialists in the different departments, it should rank among the best college texts of the day.

LOUIS A. PARSONS

Maschinen und Apparate der Starkstromtechnik (Machines and Apparatus for Heavy Currents). By GUSTAVE M. MEYER. Published by B. G. Teubner, of Leipzig and Berlin. 1912.

So rapid has been the development of machines and apparatus used in connection with the many applications of electricity to power purposes that it is well-nigh impossible